Pushing the Envelope			
2007 Mathematics			
Learning Results: Parameters for Essential Instruction			
Maine Mathematics			
Grade 5			
Activity/Lesson	**State**	**Standards**	
Types of Engines (pgs. 11-23)	ME	MA.5.B.1.a	Students understand and use measures of elapsed time, temperature, capacity, mass, and use measures of mass and weight. Select and use appropriate tools and units (mass in grams, weight in pounds) for these measures.
Chemistry (pgs. 25-41)	ME	MA.5.C.3.a	Students understand how to find the volume and surface area of rectangular prisms. Know how to build solids with unit cubes and find their volume.
Chemistry (pgs. 25-41)	ME	MA.5.C.3.c	Students understand how to find the volume and surface area of rectangular prisms. Know how to derive and use the formula (length x width x height) for the volume of a rectangular prism.
Physics and Math (pgs. 43-63)	ME	MA.5.D.1.a	Students use symbols to represent or model quantities, patterns, and relationships and use symbolic manipulation to evaluate expressions and solve equations. Students solve problems using symbols, tables, graphs, and verbal rules choosing the most effective representation and converting among representations. Create and evaluate expressions with no more than three variables.
Pushing the Envelope			
2007 Mathematics			
Learning Results: Parameters for Essential Instruction			
Maine Mathematics			
Grade 6			
Activity/Lesson	**State**	**Standards**	
Types of Engines (pgs. 11-23)	ME	MA.6.D.3.a	Students use tables, formulas, diagrams, and graphs to analyze relationships between quantities. Use tables, formulas and graphs to analyze constant difference (additive) relationships.
Types of Engines (pgs. 11-23)	ME	MA.6.D.3.b	Students use tables, formulas, diagrams, and graphs to analyze relationships between quantities. Use tables, formulas, and graphs to analyze constant ratio (multiplicative) relationships.
Chemistry (pgs. 25-41)	ME	MA.6.D.3.a	Students use tables, formulas, diagrams, and graphs to analyze relationships between quantities. Use tables, formulas and graphs to analyze constant difference (additive) relationships.

Chemistry (pgs. 25-41)	ME	MA.6.D.3.b	Students use tables, formulas, diagrams, and graphs to analyze relationships between quantities. Use tables, formulas, and graphs to analyze constant ratio (multiplicative) relationships.
Physics and Math (pgs. 43-63)	ME	MA.6.A.4.a	Students understand how to express relative quantities as percentages and as decimals and fractions. Use ratios to describe relationships between quantities.
Physics and Math (pgs. 43-63)	ME	MA.6.D.2.b	Students recognize and solve problems involving linear equations and recognize examples and non-examples of linear equations. Recognize from a table whether a relationship has a constant rate of change.
Physics and Math (pgs. 43-63)	ME	MA.6.D.3.a	Students use tables, formulas, diagrams, and graphs to analyze relationships between quantities. Use tables, formulas and graphs to analyze constant difference (additive) relationships.
Physics and Math (pgs. 43-63)	ME	MA.6.D.3.b	Students use tables, formulas, diagrams, and graphs to analyze relationships between quantities. Use tables, formulas, and graphs to analyze constant ratio (multiplicative) relationships.
Rocket Activity (pgs. 69-75)	ME	MA.6.D.3.a	Students use tables, formulas, diagrams, and graphs to analyze relationships between quantities. Use tables, formulas and graphs to analyze constant difference (additive) relationships.
Rocket Activity (pgs. 69-75)	ME	MA.6.D.3.b	Students use tables, formulas, diagrams, and graphs to analyze relationships between quantities. Use tables, formulas, and graphs to analyze constant ratio (multiplicative) relationships.
Pushing the Envelope			
2007 Mathematics			
Learning Results: Parameters for Essential Instruction			
Maine Mathematics			
Grade 7			
Activity/Lesson	**State**	**Standards**	
Types of Engines (pgs. 11-23)	ME	MA.7.D.3.a	Students understand and use directly proportional relationships, y = kx. Recognize directly proportional relationships by information in a table, graph, or formula.
Chemistry (pgs. 25-41)	ME	MA.7.D.3.a	Students understand and use directly proportional relationships, y = kx. Recognize directly proportional relationships by information in a table, graph, or formula.

Physics and Math (pgs. 43-63)	ME	MA.7.A.3.a	Students understand that when the ratio of two varying quantities is constant, the two quantities are in direct proportion. Use ratios to compare quantities and use comparison to solve problems.
Physics and Math (pgs. 43-63)	ME	MA.7.B.2.b	Students understand and apply concepts of probability to simple events. Predict the probability of outcomes of simple experiments and verify predictions using the understanding that the probability of an occurrence is the ratio of the number of actual occurrences to the number of possible occurrences.
Physics and Math (pgs. 43-63)	ME	MA.7.D.3.a	Students understand and use directly proportional relationships, y = kx. Recognize directly proportional relationships by information in a table, graph, or formula.
Rocket Activity (pgs. 69-75)	ME	MA.7.D.3.a	Students understand and use directly proportional relationships, y = kx. Recognize directly proportional relationships by information in a table, graph, or formula.
Pushing the Envelope			
2007 Mathematics			
Learning Results: Parameters for Essential Instruction			
Maine Mathematics			
Grade 8			
Activity/Lesson	**State**	**Standards**	
Physics and Math (pgs. 43-63)	ME	MA.8.D.4.a	Students understand and use the basic properties of linear relationships, y = kx + b. Understand that linear relationships are characterized by a constant rate of change, k.
Pushing the Envelope			
2007 Mathematics			
Learning Results: Parameters for Essential Instruction			
Maine Mathematics			
Grades 9-12			
Activity/Lesson	**State**	**Standards**	
Chemistry (pgs. 25-41)	ME	MA.9-12.C.4.a	Students find the surface area and volume of three-dimensional objects. Find the volume and surface area of three-dimensional figures including cones and spheres.
Chemistry (pgs. 25-41)	ME	MA.9-12.C.4.b	Students find the surface area and volume of three-dimensional objects. Determine the effect of changes in linear dimensions on the volume and surface area of similar and other three-dimensional figures.